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EXAMINER

CHORBAJI, MONZER R

ART UNIT	PAPER NUMBER
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1744

8

DATE MAILED: 11/05/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application N .

09/830,088

Applicant(s)

HINZE, GILBERT THEO

Examiner

MONZER R CHORBAJI

Art Unit

1744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 August 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 17-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

This final office action is in response to the amendment received on 08/23/2002

#### ***Specification***

1. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

On pages 4-5 of the specification, applicant does not clearly show the source of the oxidant and reductant species. Does an aqueous sodium chloride solution result in the formation of the species when electrolyzed by the apparatus? Then, where does the oxidant species "S2O8" come from? Clarification is needed to understand the invention.

#### ***Claim Objections***

2. Claim 25 is objected to because of the following informalities:

In claim 25, line 4; the term "HO2" is repeated twice. Please remove one of them.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 17, 25, 28-29, and 31 rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claim 17, lines 7-9; applicant uses the terms "predominantly anion-containing solution and predominantly cation-containing solution". There are no such terms included in the specification. The same argument applies to 28-29 and 31.

In claim 25, line 4; applicant provides "Hs" as an example of a mixed reductant. However, the specification does not include such a species.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

5. Claims 17, 19, 23, 25-29, 31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 17, lines 7-8; applicant uses the term "mixed". The meaning of this term is not understood since oxidants and reductants are inherently mixed in the aqueous system. It would be better to remove such a term from claim 17. The same argument applies to claims 19, 23, 25, 28-29, and 31.

In claim 19, line 2; applicant uses the term "3 to 10% aqueous solution". Does the applicant mean that the concentration range is for the group of compounds in claim 17? Clarification and rewording of the claim are needed to understand the meaning of claim 19.

In claim 26, line 2; applicant uses the term "the physical characteristics". Does the applicant refer to the concentration or the pH or the redox potential? Clarification and rewording of the claim are needed to understand the meaning of claim 26. Also, in claim 26, line 4; applicant uses the term "are adjustable". There is no explanation of how

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the physical characteristics can be adjusted. It would be better to remove such a term from claim 26.

In claim 27, line 4; applicant uses the term "having". Does the applicant mean comprising or consisting? Clarification is needed to understand the meaning of claim 27. It would be better to substitute the term "having" with the terms comprising or consisting as mentioned above. The same argument applies to claim 31. Furthermore, claim 27 is a method claim but is written as an apparatus claim. Rewriting of the claim is required.

6. Claim 19 recites the limitations "mixed reductant and mixed oxidant" in line 4. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 17 and 22-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Doi (EP 0,802,164).

With respect to claim 17; Doi teaches a method (page 1, lines 5-8) for treating bulk food storage containers (page 5, lines 51-55) by using electrochemically activated aqueous solution. In addition, Doi teaches the use of an electrolysis device (page 1, lines 19-20) which inherently produces a predominantly cation-containing solution (page 1, lines 36-37).

With respect to claim 28, Doi teaches of treating fresh produce with electrochemically activated aqueous solution (page 5, lines 54-55) during storage in a food container (page 5, line 55). Furthermore, Doi teaches the use of and electrolysis device (page 1, lines 19-20) which inherently produces a predominantly cation-containing solution (page 1, lines 36-37).

With respect to claim 29, Doi discloses that electrochemically activated aqueous solution can be applied to fresh produce and also to containers in food facilities (page 5, lines 51-55). Thus, such facilities inherently include means for producing the activated aqueous solution. Also, Doi teaches the use of and electrolysis device (page 1, lines 19-20) which inherently produces a predominantly cation-containing solution (page 1, lines 36-37).

With respect to claim 31, Doi teaches that the means for producing the activated aqueous solution can be transported (page 15, lines 50-53). Thus, a transporter is inherently needed to transport the means. Also, Doi teaches the use of and electrolysis device (page 1, lines 19-20) which inherently produces a predominantly cation-containing solution (page 1, lines 36-37).

With respect to claims 22-25, Doi discloses that an anion-containing solution or a cation-containing solution inherently includes hydroxide ions (page 1, line 20). Also, since an anion-containing solution and a cation-containing solution are produced then they must inherently include such a redox potential and pH ranges.

With respect to claim 26, Doi teaches that the activated aqueous solution can be applied to various fields (page 16, lines 41-43). This inherently means that the physical

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characteristics of the activated aqueous solution can be easily manipulated depending on the type of field.

With respect to claim 27, Doi teaches a method in which the activated aqueous solution is anion-containing solution produced by an electrolysis device (page 1, lines 19-20) having the following inherent limitations: an electrochemical cell (page 1, lines 19-20) with two electrodes (page 1, line 22) and a diaphragm (page 1, line 23) to separate the inter-electrode space into a catalytic and analytic chambers (page 1, lines 23-24).

With respect to claim 30, Doi discloses that the activated aqueous solution be applied to food facilities (page 5, lines 54-55) such that the activated aqueous solution is in iced form (page 10, lines 1-4).

### ***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claims 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doi (EP 0,802,164).

With respect to claim 18, Doi teaches that ice made from the electrochemically activated aqueous solution is used to pack seafood in the container (page 10, lines 1-4). Also, Doi discloses that the electrochemically activated aqueous solution can be used in the food industry (page 5, lines 54-55). Thus, it would have been obvious to apply ice made from the electrochemically activated aqueous solution in packing fresh produce in the container as taught by Doi.

With respect to claim 19, Doi teaches that a small amount of aqueous salt solution is added (page 1, lines 24-26) before the electrolysis process. However, a small amount is inclusive of the range in claim 8. Furthermore, optimization of such a parameter (concentration) is well within the scope of the artisan.

With respect to claim 20, Doi's electrochemically activated aqueous solution is intrinsically labile as well as would intrinsically disappear in about 96 hours (page 1, lines 19-26) with relatively no residues being produced (page 5, line 53).

With respect to claim 21, Doi teaches the use of sodium chloride (page 10, lines 42-43).

### ***Response to Arguments***

12. Applicant's arguments filed 08/23/2002 have been fully considered but they are not persuasive.

On page 8 of the response, applicant uses the terms "predominantly anion-containing stream and predominantly cation-containing streams" such terms are



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equivalent to anolyte and catholyte streams. Doi's teaches that it is known to produce two separate liquids (page 1, lines 19-26). Doi goes further to show that for example acidic water (anolyte) is known to be used as a bactericide (page 1, lines 36-37).

On pages 8-10 of the response, applicant argues that it has not heretofore been known to produce and harvest two separate product streams, wherein one is a cation-rich stream and the other is an anion-rich stream. Doi discloses that it is known to have electrolytic cells wherein the cathode and the anode are separated by a diaphragm such a cell inherently produces two separate cationic and anionic product streams (page 1, lines 22-24). Furthermore, Doi's apparatus and method apply both of the solutions concurrently (page 2, lines 50-55).

On page 10 of the response, applicant argues that the electrochemical of the present invention provides for a much higher and more uniform electric field to which the solutions are exposed. However, such a limitation is not recited in the claims.

On page 10 of the response, applicant argues that Doi does not propose separating or independently using the cation and anion containing streams or solutions. Doi does teach that it is known to use electrolytic cells, which include a diaphragm such that the cell is divided into an anode chamber and a cathode chamber (page 1, lines 22-24). Also, Doi teaches that acidic water (anolyte) has bactericidal properties and is used in the food product industry (page 1, lines 34-37). With regard to using the cation and anion solutions, the amended claims do not recite such a limitation. For example, claim 17, lines 6-9, recite that the bactericidal solution can be mixed oxidant or anolyte or

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mixed reductant or catholyte or mixtures of the above. Such a claim does not require the use of catholyte and anolyte solutions.

On page 10 of the response, applicant argues that Doi discloses preparing raw water containing hydrochloric acid. Doi teaches that it is known to add common salt (sodium chloride) to the water in order to increase the electrical conductivity to the cell (page 1, lines 24-25). Such an apparatus would inherently produce mixed oxidants and mixed reductants.

On page 11 of the response, applicant argues that the solutions of the present invention are environmentally friendly. However, such a limitation is not recited in the claims.

On page 12 of the response, applicant argues that there is nothing in Doi that teaches or suggests using both anolyte and catholyte streams for treating bulk food storage containers. As explained above, the amended claims do not recite only using both anolyte and catholyte solutions. Also, Doi discloses of treating food containers (page 5, lines 51-55).

### ***Conclusion***

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

14. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MONZER R CHORBAJI whose telephone number is (703) 305-3605. The examiner can normally be reached on M-F 8:30-5:00.

16. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ROBERT J WARDEN can be reached on (703) 308-2920. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3599 for regular communications and (703) 305-7719 for After Final communications.

17. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Monzer R. Chorbaji *MRC*  
Patent Examiner  
AU 1744  
November 1, 2002

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